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Metal Industry Indicators

Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for October and November—Summary Report

December 17, 2004

The **primary metals leading index** increased 1.3% in November to 143.9 from a revised 142.1 in October, and its 6-month smoothed growth rate increased for the first month since July. It rose to 3.5% from a revised 1.9% in October. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. Usually a growth rate above +1.0% signals an increase in metals activity, and a growth rate below -1.0% indicates a downturn in activity. The rebound in the leading index growth rate suggests that primary metals industry activity could grow at a modest-to-moderate pace in the near future. Domestic and global metals demand is still high enough to support this level of growth, despite higher energy and raw materials costs.

Two of the four indicators that were available for the November index calculation increased, one decreased, and one remained at its October level. The highest stock price index for construction and farm machinery companies and for industrial machinery companies on record made a 1.2-percentage-point contribution to the net increase in the leading index. The first increase in the PMI, a measure of U.S. manufacturing activity, since July made a 0.2-percentage-point contribution. However, a slight decline in the JOC-ECRI metals price index growth rate held the leading index back 0.2 percentage points. The November average workweek in primary metals establishments was the same as in October, thus its contribution registered at zero. The November leading index should be considered preliminary because only four of its eight indicators were available, and the leading index will likely be revised when the other components are added next month.

Metals are key inputs in durable goods manufacturing and construction, which account for almost a quarter of gross domestic product final sales. Therefore, the primary metals leading index also gives early signals of major changes in activity for the overall U.S. economy (Chart 8).

The primary aluminum and the aluminum mill products indexes are suspended because of discontinued availability of industry-specific historical data. The USGS will continue to calculate the steel and copper composite indexes. These indexes are available through October. The copper leading index decreased 0.5% in October with four of six indicators declining. However, it is the volatile copper price that is creating the most instability in the leading index over the past year. Nevertheless, the index's growth rate continues to decline and points to a decrease in U.S. copper activity growth. The steel leading index fell 1.5%

in October, with seven of its nine indicators declining. New housing permits issued in October and the growth rate of the JOC steel scrap price, however, made small positive contributions to the steel leading index. This steel price indicator has risen steadily for more than two years, indicating strong demand for steel. Despite a sharp drop in the leading index's growth rate in October, the outlook for steel industry activity growth is moderate in the near future.

The **metals price leading index** moved up 0.3% in October, the latest month for which it is available, to 110.1 from a revised 109.8 in September, and its 6-month smoothed growth rate increased to -4.8% from a revised -5.8% in September. Two of its three available indicators decreased in October. However, the 0.8 percentage point contribution from the surge in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar outweighed those declines. A closer yield spread between the U.S. 10-year Treasury Note and the federal funds rate, which has been generally narrowing for the last year, made a -0.2-percentage-point contribution. The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products also contributed -0.2 percentage points. The fourth component, the growth rate of the ECRI 18-Country Long Leading Index was only available though September. It decreased slightly and continues to indicate slower growth in global economies. The ECRI 18-Country Long Leading Index gauges future economic activity for major industrialized countries and signals changes in the growth of economic activity about 5 months in advance. The metals price leading index signals major changes in the growth rate of nonferrous metal prices an average of 8 months in advance.

The growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories, which is an indicator of supply, increased to -5.6% in October from a revised -7.1% in September. This indicator usually moves inversely with the price of metals. However, the uptick in the metals price leading index growth rate may be a precursor to a boost in metals price growth.

The percent changes from September to October for the **metal industry coincident indexes**, which measure current economic activity, are shown below. October is the latest month for which these indexes are available.

Primary Metals	0.1%
Steel	-0.2%
Copper	0.2%

Tables 1, 3, 5, and 7 identify the indicators and, for the industry indexes, show the contributions of each indicator to its respective index.

The *Metal Industry Indicators* report is produced at the U.S. Geological Survey by the Minerals Information Team. For more information about these indexes and the *Metal Industry Indicators* monthly report, contact Gail James (703-648-4915), (e-mail, gjames@usgs.gov) at the U.S. Geological Survey.

The *Metal Industry Indicators* summary report with indexes for November and December is scheduled for release on the World Wide Web at 10:00 a.m. EST, Friday, January 21.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

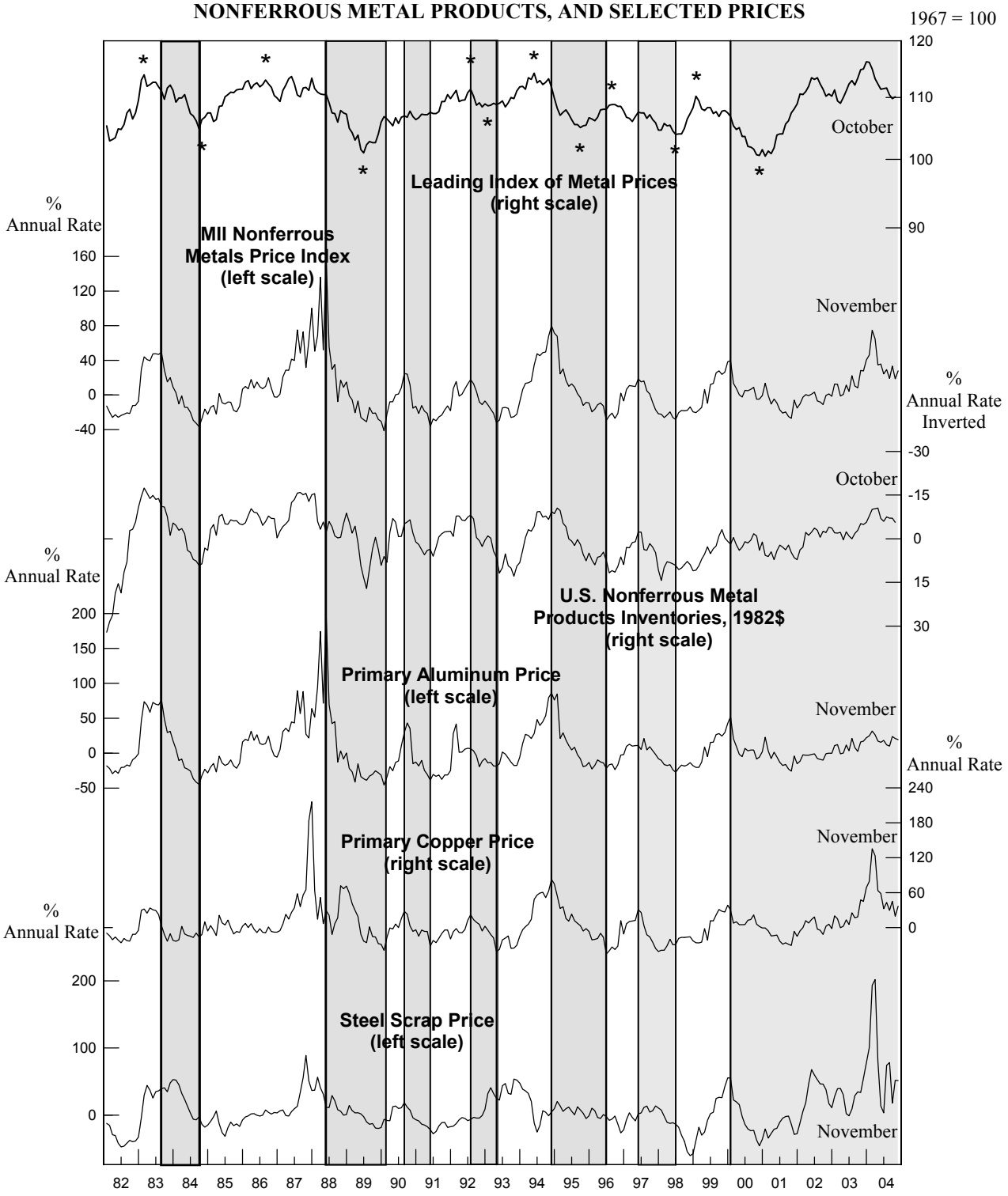
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
2003						
October	114.8r	28.2	-5.2	15.9	47.5	33.8
November	114.9r	27.7	-4.9	17.2	44.8	55.2
December	116.2r	40.4	-5.6	22.2	68.6	77.9
2004						
January	116.1r	46.1	-7.8	24.7	79.3	100.7
February	114.9r	74.8	-10.1	31.7	135.4	193.5
March	113.2r	64.7	-10.3	26.3	123.4	201.9
April	112.3	34.7	-10.5	17.3	63.4	80.1
May	111.4r	35.9	-7.0	15.5	58.8	13.8
June	111.5r	24.5	-6.0r	18.2	32.4	3.4
July	111.6r	29.4	-7.5r	11.8	43.2	74.4
August	110.4r	19.2	-7.1r	10.2	29.4	78.3
September	109.8r	33.4	-7.1r	23.8	45.1	18.0
October	110.1	18.6	-5.6	21.0	19.5	51.8
November	NA	28.0	NA	19.2	36.7	51.4

NA: Not available **r:** Revised

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metal products, the Economic Cycle Research Institute's 18-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metal products (NAICS 3313, 3314, & 335929). Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, December 2004

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2003				
December	137.8	9.8	97.5	2.4
2004				
January	138.9	10.4	97.6	2.6
February	140.9	12.0	98.0	3.6
March	142.8	13.3	99.2	5.8
April	142.6	11.0	98.1	3.5
May	142.7	9.2	98.2	3.2
June	142.4r	7.2r	99.5r	5.4r
July	143.9	7.9	99.7	5.0
August	142.8r	4.9r	99.9r	4.6r
September	142.0	2.8r	99.4r	2.8
October	142.1r	1.9r	99.5	2.4
November	143.9	3.5	NA	NA

NA: Not available **r:** Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**October**	**November**
1. Average weekly hours, primary metals (NAICS 331)	-0.1r	0.0
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994 = 100)	0.2r	1.2
3. Ratio of price to unit labor cost (NAICS 331)	0.4	NA
4. JOC-ECRI metals price index growth rate	0.2r	-0.2
5. New orders, primary metal products, (NAICS 331 & 335929) 1982$	-0.2	NA
6. Index of new private housing units authorized by permit	0.1	NA
7. Growth rate of U.S. M2 money supply, 2000$	-0.3	NA
8. PMI	-0.2r	0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.1r	1.2

Coincident Index	**September**	**October**
1. Industrial production index, primary metals (NAICS 331)	-0.1r	0.3
2. Total employee hours, primary metals (NAICS 331)	-0.3	0.0
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982$	-0.2	-0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	0.2

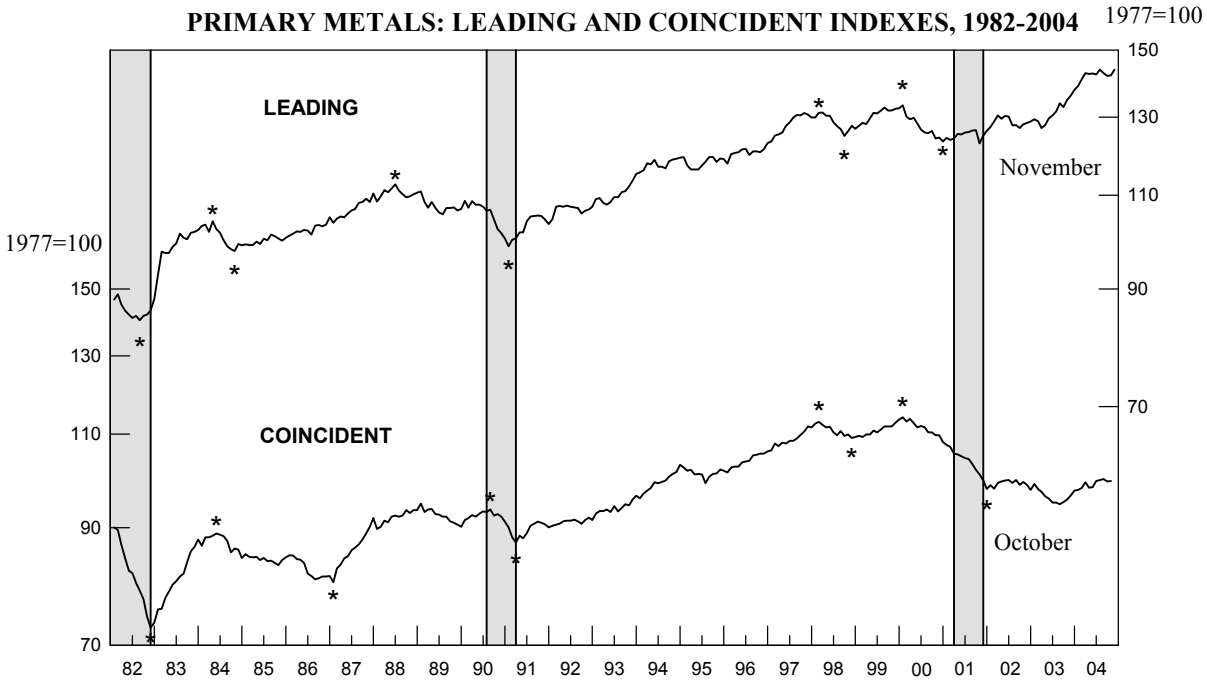
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available **r:** Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

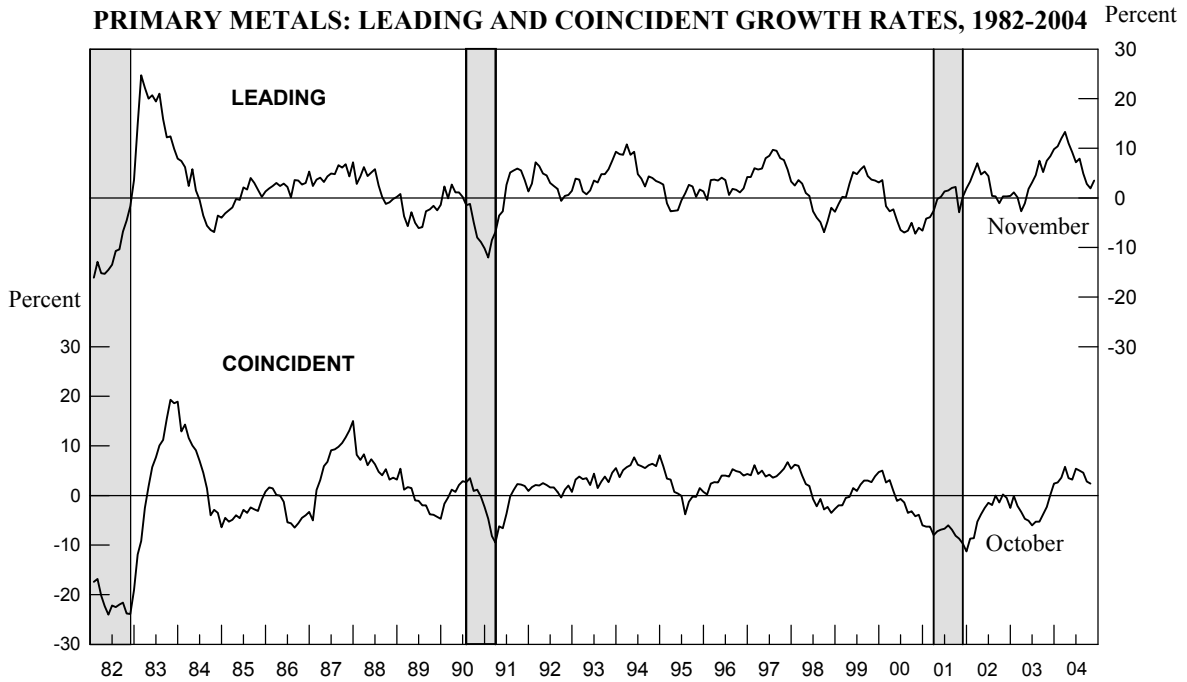
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1982-2004



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1982-2004



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2003				
November	113.6	5.1	91.5	-2.1
December	114.5	6.1	93.4	2.3
2004				
January	113.7	4.3	93.2	2.1
February	113.3	3.2	92.1	0.1
March	114.5	4.5	92.4	1.1
April	115.2	4.7	92.2	0.8
May	116.4	5.9	92.4	1.4
June	116.3r	4.8r	94.1r	4.8r
July	117.5	6.2	93.4	2.8r
August	117.2	4.7	93.6	2.8
September	118.1r	5.6r	94.2r	3.3r
October	116.3	1.8	94.0	2.5

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

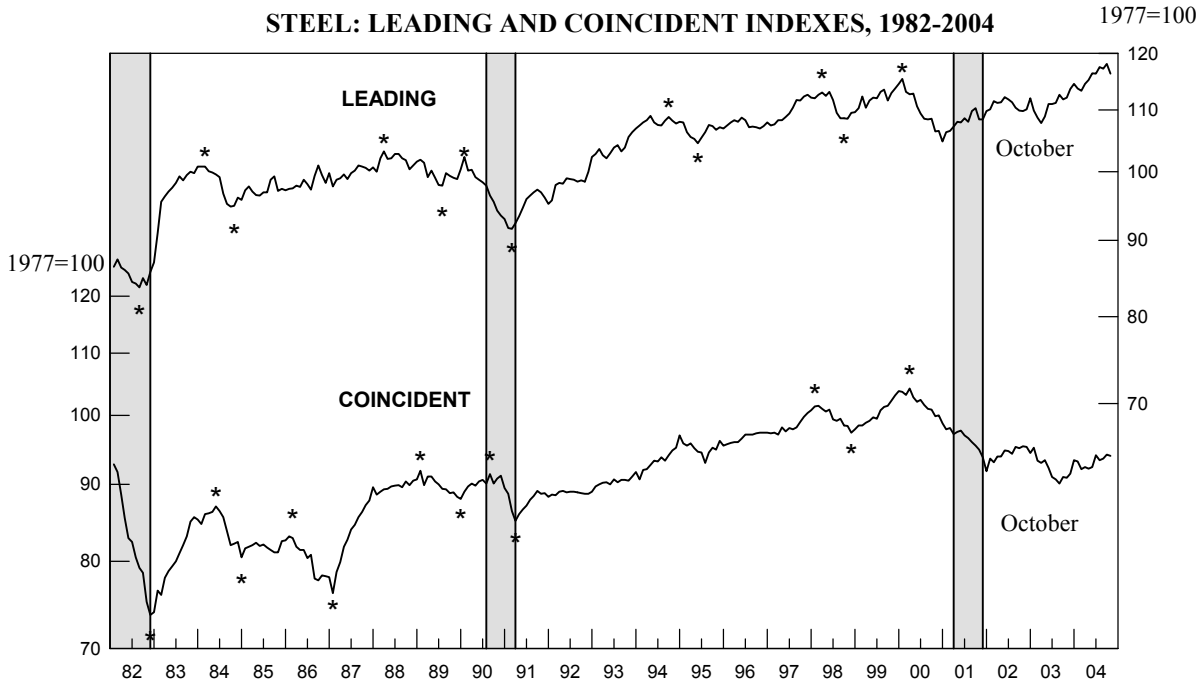
Leading Index	**September**	**October**
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.1	0.0
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.3r	-0.4
3. Shipments of household appliances, 1982$	0.1	-0.3
4. S&P stock price index, steel companies	0.3	-0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	0.3	-0.3
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	0.1	0.1
7. Index of new private housing units authorized by permit	0.1	0.0
8. Growth rate of U.S. M2 money supply, 2000$	0.3	-0.3
9. PMI	-0.1	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.9r	-1.5
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.3r	0.1
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982$	0.1r	-0.5
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.2	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.7r	-0.2

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, U.S. Bureau of Economic Analysis and American Automobile Manufacturers Association; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.

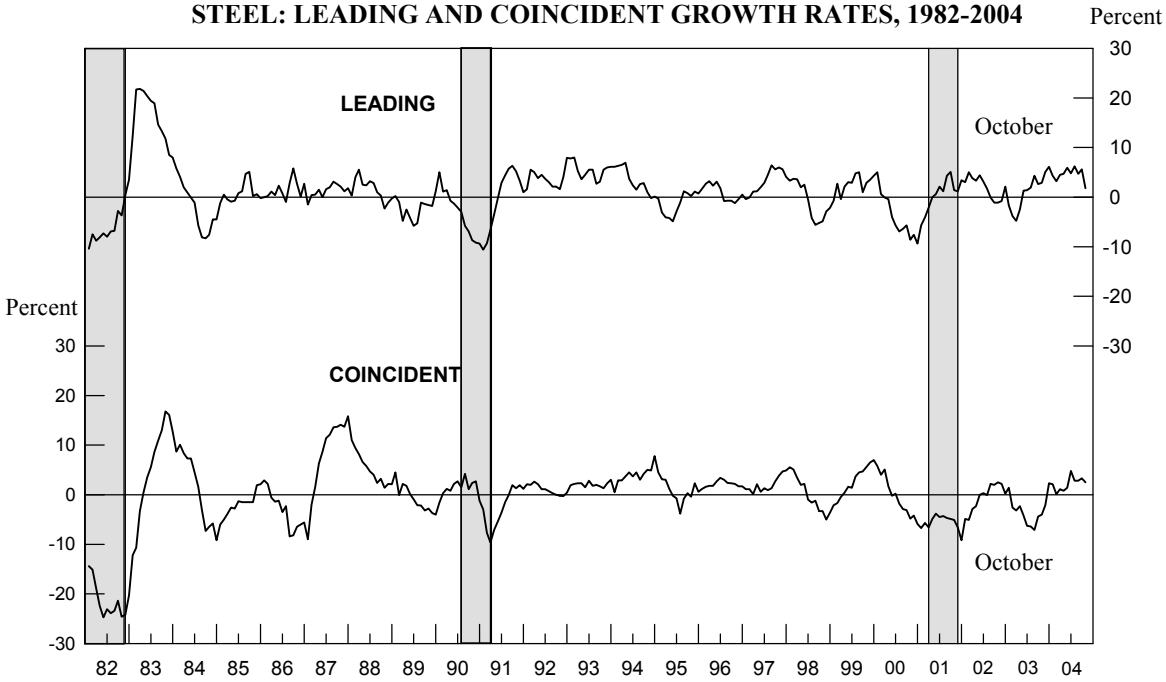
STEEL: LEADING AND COINCIDENT INDEXES, 1982-2004



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.

STEEL: LEADING AND COINCIDENT GROWTH RATES, 1982-2004



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 6.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2003				
November	122.9	7.6	106.5	-1.8
December	124.6	9.6	107.8	0.9
2004				
January	124.8	8.9	106.9	-0.6
February	126.4	10.4	106.9	-0.2
March	128.0	11.5	108.3	2.4
April	127.7	9.3	109.8	4.9
May	128.8	9.4	110.8	5.9
June	128.2	7.0r	111.1	5.8r
July	128.5	6.0	110.7r	4.4r
August	127.3	3.1	109.2r	1.5r
September	127.6r	2.6r	108.6r	0.2r
October	127.0	0.9	108.8	0.3

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

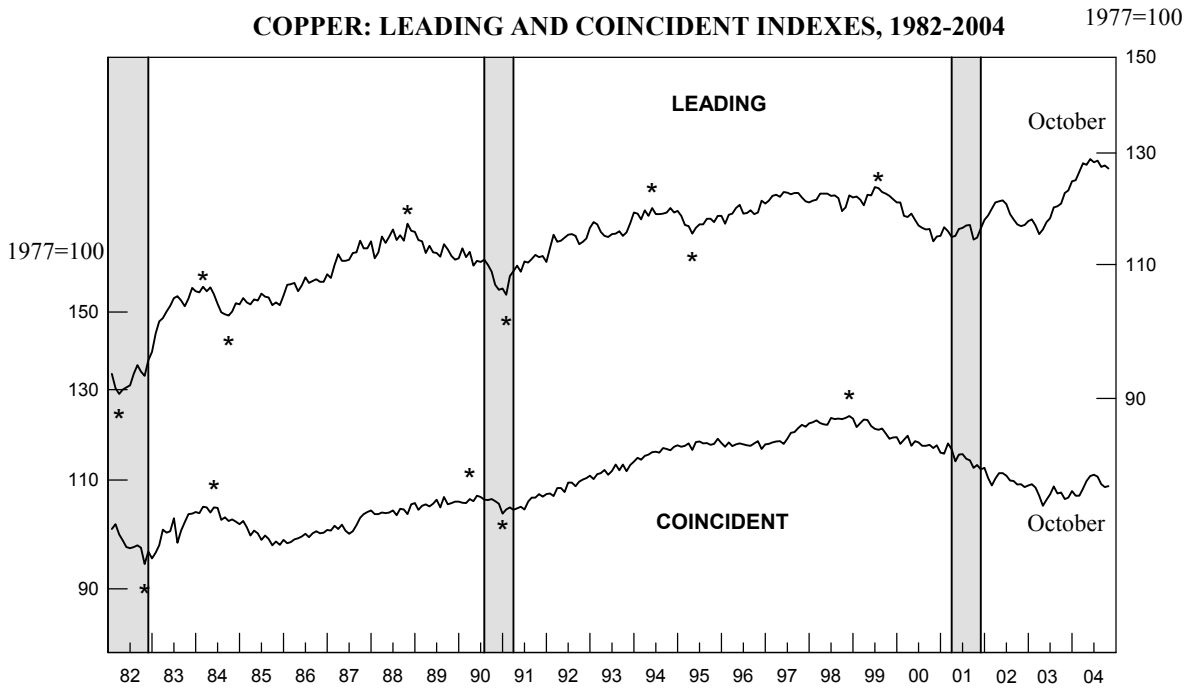
Table 7.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	September	October
1. Average weekly overtime hours, copper rolling, drawing, extruding, and alloying (NAICS 33142)	-0.5	0.2
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982$	-0.1r	-0.1
3. S&P stock price index, building products companies	0.4	0.0
4. LME spot price of primary copper	0.6	-0.4
5. Index of new private housing units authorized by permit	0.1	0.1
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.3	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.2r	-0.4
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.1r	0.3
2. Total employee hours, copper rolling, drawing, extruding, and alloying (NAICS 33142)	-0.7	-0.2
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	0.2

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 4, and 6 of the leading index.

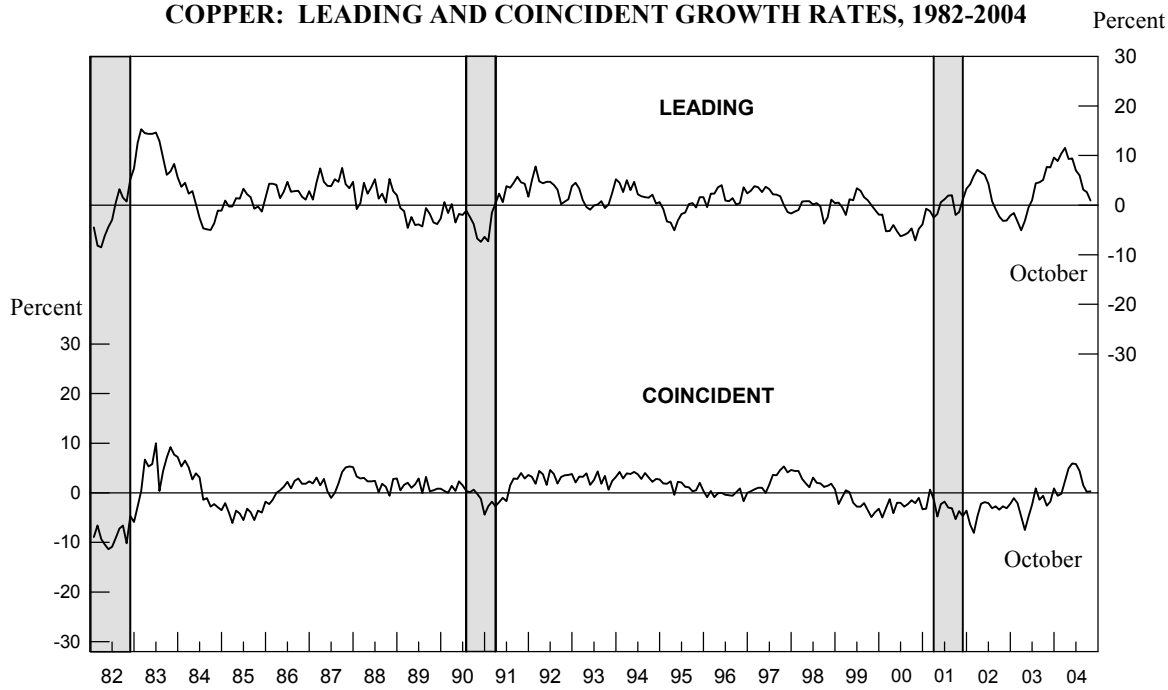
r: Revised NA: Not available

CHART 6.
COPPER: LEADING AND COINCIDENT INDEXES, 1982-2004



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1982-2004

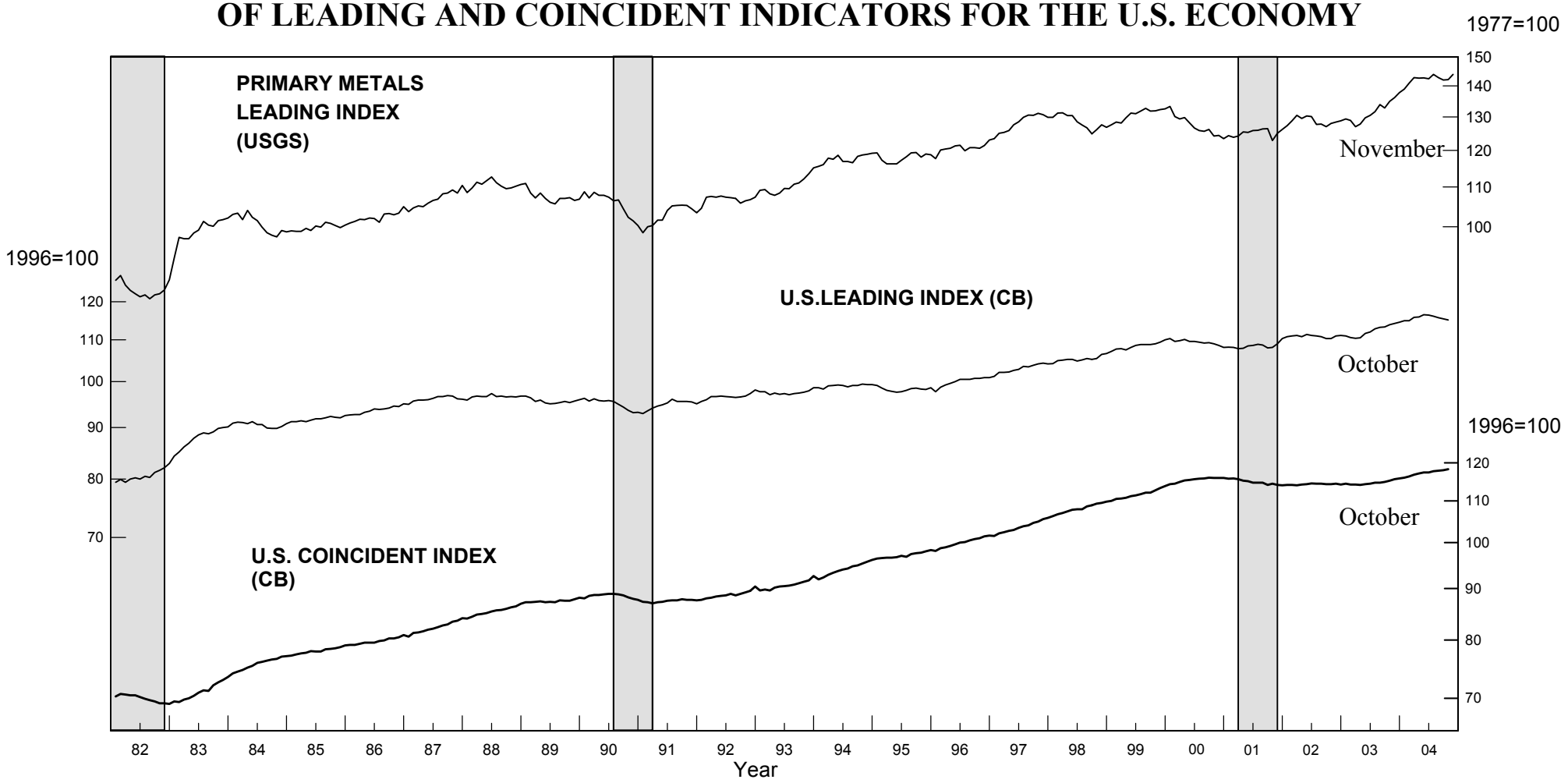


Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 8.

PRIMARY METALS LEADING INDEX AND COMPOSITE INDEXES OF LEADING AND COINCIDENT INDICATORS FOR THE U.S. ECONOMY



Shaded areas are business cycle recessions.

Sources: U.S. Geological Survey (USGS) and Conference Board (CB).

December 2004